

CROP RESIDUES

Estimating Crop Residue Cover (*Quality Control*)

The Line Transect Method

HOW ACCURATE WILL THE AVERAGE (MEAN) OF THE MEASUREMENTS BE? When five measurements are taken, estimates of residue cover will be accurate (at the 95% confidence level) to plus or minus 15 percent of the average of the actual measurements.

EXAMPLE = measure ground cover five times

5 measurements = 35 43 38 40 39
Total = 195

195 divided by 5 = average of 39% ground cover

$39 \times .15 = \pm 5.8\%$ variance

$39 + 5.8 = 45\%$ ground cover

$39 - 5.8 = 33\%$ ground cover

You can be confident that the true average in this field is somewhere between 33% and 45% ground cover 95% of the time.

There is adequate residue if 45 percent or less ground cover is required. Residue greater than 45 percent would occur only two and one half percent of the time.

There is not enough residue if more than 45 percent ground cover is required.

DOCUMENTATION REQUIREMENTS FOR RESIDUE MEASUREMENTS

Three transects in a field will be adequate when the planned level does not exceed the average of the measurements by more than 10 percent.

Five transects are required for a field when the planned level exceeds the three measurements by more than 10 percent.

The location of each transect will be documented on a photo when the average does not meet the planned level.

RESIDUE REQUIREMENTS AT VARIOUS PLANNED LEVELS

Planned ground cover	Average needed when five measurements are required	Average needed when three measurements are acceptable
10	9	9
15	13	14
20	17	18
25	22	23
30	26	27
35	30	32
40	35	36
45	39	41
50	44	45
55	48	50
60	52	55
65	57	59
70	61	64